**On-farm research field evaluation report for Debre Birhan (9 August 2013) and Hadiya (13-15 August 2013)**

The ILRI team (Peter, Kindu and Simret), Debre Birhan (DB) Research Center (Temesgen), Debre Birhan University (Hailu) and Basona Worena Woreda Office of Agriculture (Yibrah) visited more than 7 farmers’ on-farm research plots (**Photo 1**).



Photo 1. A visit at Gudo Beret Kebele by AR team from ILRI, DB research, DB University, Basona Worena extension officer and a farmer.

Similarly, the ILRI team, Abiyot (CIP), Sisay (Hawassa University) and Belayneh and Tamrat (Lemo woreda extension staff members) visited 6 farmers’ fields in Jawe, 3 in Upper Gana and existing water structures (**Photo 2**).



Photo 2. Shallow wells and rope and washer pump system at Jawe.

The vegetative growth of wheat, potato and faba bean both in Gudo Beret and Goshe Bado kebeles was good in most plots (**Photo 3**). In some cases, a recently observed disease has infested faba bean crops. Some farmers have not also put effort to weed their plots because of various reasons such as labour shortage, high rainfall and muddy soil in the on-farm plots.



Photo 3. Improved potato varieties with improved management practices at Gudo Beret Keble.

The most important observations in Lemo include good performance of the wheat, potato, and faba bean fields (**Photo 4**). In some cases especially in upper Gana, the performance/germination of the Gera potato is slow, and this variety covered less area of the plots. Farmers raised the issue of high labour demand for making rows and growing wheat. They have also observed proper space utilization and fertilizer application in the on-farm research demos as compared to the conventional/local crop production systems. Farmers used to apply fertilizer on the top of potatoes during planting. In the on-farm research demos fertilizer has been applied around the potato, which helped to avoid burning and decay of the potato plant. Chemical utilization to protect potato late blight has been a good lesson for farmers in the on-farm demos. In the local system, farmers apply more chemicals to control late blight. The frequency of chemical application has been found more in the local system than in the on-farm demos.

Most important issues identified and discussed as a way forward include the issue of Enset bacterial wilt disease, farmers’ interview, forage biomass measurement in faba bean fields and preparation for field-days.



Photo 4. Improved wheat varieties planted in rows at upper Gana kebele

1. The Enset issue

Sisay, PhD student at Hawassa University, will conduct a quick assessment on Enset issues (including bacterial wilt disease; **Photo 5**). He will produce a brief report that will support the introduction of disease tolerant enset varieties both in Jawe and upper Gana kebeles. He will consider some of the following issues in his questionnaire:

* Extent of the bacterial wilt problem
* Differentiate varieties tolerant and susceptible for bacterial wilt
* Farmers awareness on the disease and agents for disseminating the disease
* Options in terms of varieties both from farmers field and from research
* Enset-livestock interaction (feed-manure issues)
* Enset processing, marketing and multiple uses



Photo 5. Yellow exudate: a symptom for enset bacterial wilt at Jawe and Upper Gana kebeles

Sisay is supposed to submit a work plan within two weeks’ time including the budget component. He will also prepare a report with suggestions/recommendations within three months’ time. Sisay’s supervisors (Dr. Alemayehu and Dr. Firdu) from Hawassa University will be communicated by Kindu.

1. Farmers interview

The objective of this activity is to gather information from the farmers concerning the lessons/impressions, challenges and plans in relation to the implementation of the on-farm research activities (**Photo 6**). For this work a checklist will be prepared by Kindu and Peter and shared to those who will gather the information. A synthesis will be produced from this activity and will be shared with the extension, NGOs and other end users. The activity will be done with the 72 farmers both at the crop vegetative and final stage of the crops. Gebrehiwot from Tigray, Abiyot from SNNPR and Gerba from ILRI are proposed to manage the work at Endamehoni, Lemo and Sinana, respectively. The Basona site will be handled by Temesgen, Hailu and some other technicians from ILRI.



Photo 6. A women farmer’s reflection on improved faba bean varieties and management practices at Jawe kebele.

1. Forage measurement in faba bean fields

Some farmers in the highlands of Ethiopia deliberately let forage plants/weeds to grow in their faba bean fields to use them as sources of supplementary animal feed (**Photo 7**). On the other hand, farmers are growing improved faba bean varieties with their packages based on the advice from the extension. Farmers have less pressure of weeding in the local faba bean growing practice. They timely weed the forage plants in the improved management practices. There is a need now to compare the two practices/understand tradeoffs and come up with some results for further discussion with farmers and other partners. Kindu and Peter developed the following protocol that will guide the collection of forage/wild oat samples and other related information.



(b)

(a)

Photo 7. Faba bean (a) improved and (b) local growing practice at Jawe Kebele

The forage sampling will be conducted in farmers’ fields of 2 kebeles in Lemo wereda, Hadiya zone of SNNPR. The details of sampling will be:

* Three farmers that grow faba bean in both ways (improved and local system) from each of the two Kebles (Jawe and Upper Gana) will be communicated through the Lemo Wereda Office of Agriculture extension experts. These farmers are our AR on-farm demonstration farmers that practice both the local and improved system side by side and grow faba bean in their farms.
* Collect info on varieties and inputs including labour that the farmers used in the improved and local system. Document also planting time and other agronomic practices employed in both systems.
* On each farm, use a 1 m X 1 m grid and harvest the entire forage/wild oat that falls within the grid.
* Record the ***total*** fresh weight of the forage harvested.
* Repeat the exercise for two further, separate 1 x 1m grid areas in the traditionally managed faba bean plot.
* From the forage harvested within each grid, take a sub-sample (approximately 0.5kg), weigh it and seal in an airtight sample bag. These samples should be clearly labeled (Kebele and farmer’s name) then returned to ILRI for dry determination of the dry matter contents (and possibly analysis of other nutritional components).
* The fresh weight from the grids and the dry weight from the sub-samples will be used to calculate forage biomass on a hectare basis.
* Yield and yield components of the faba bean will be also measured after crop harvest for overall assessment of the local and the improved systems.

1. Field day

Field days are planned to be carried out at the vegetative and late stage of the crops. The time of the field day proposed to be done in early September. Abiyot will work/draft a guide concerning whom to invite, resources required, field day program and on-farm plots to visit.

**Kindu Mekonnen**

**26 August 2013**